

REMARKS

Applicants respectfully request reconsideration of the above-identified application in view of the foregoing amendments and the following remarks.

In the July 13, 2004 Advisory Action, the Examiner noted that claims 1, 4, 5, 9-11 and 13-15 were pending in the application and that claims 1, 4, 5, 9-11 and 13-15 were rejected. By Applicants' previous July 21, 2004 Amendment, claim 16 is added. By Applicants' instant Supplemental Amendment, claims 1, 10 and 16 are amended, and new claims 17 and 18 are added. No new matter has been added by this Supplemental Amendment. Support for the amendatory material of claims 1, 10 and 16 can be found at page 11, lines 27-28 of Applicants' specification. Applicants believe that claims 1, 4, 5, 9-11 and 13-18 are in condition for allowance. The Examiner's rejections are respectfully traversed below.

Rejection Under 35 U.S.C. §102(b) – Asami et al.

In the Advisory Action, the Examiner rejected claims 1, 4 and 9-10 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,393,924 (Asami et al.).

The present invention is drawn to a reservoir for storing hydrogen, comprising a housing, a molded body having a thickness equal to or smaller than ten millimeters and comprising a compressed hydrogen storage material powder, a heat medium passage including a duct that has a plurality of holes that extend parallel with each other in a longitudinal direction of the duct, and a filter which forms a hydrogen passage. *See* claim 1. Additionally, the present invention is drawn to a reservoir for storing hydrogen, comprising a housing a plurality of storage units stacked in the interior of the housing, wherein each storage unit includes: a pair of plate-like molded bodies each having a thickness equal to or smaller than ten millimeters and

comprising a compressed hydrogen storage material powder, a heat exchanger located between the molded bodies (wherein the heat exchanger includes a flat duct having a plurality of holes that extend parallel with each other in a longitudinal direction of the duct), and a plurality of filters which form flat hydrogen passages. *See* claim 10.

Asami et al. is directed to a heat exchange apparatus for use with hydrogen storing material, which is characterized in that a regenerator chamber packed with a heat storing material is disposed in between a high temperature fluid pathway and a low temperature pathway of the heat exchanger. Col. 2, lines 9-14. Asami does not disclose a molded body having a thickness equal to or smaller than ten millimeters.

Thus, Asami fails to disclose the instant invention. As claims 1, 10 and 16 (and dependent claims 4 and 9) all recite this thickness limitation, Asami et al. cannot anticipate these claims. Accordingly, withdrawal of the Examiner's rejection is respectfully requested.

Rejection Under 35 U.S.C. §103(a) – Asami et al.

In the Advisory Action, the Examiner rejected claims 5 and 11 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,393,924 (Asami et al.). According to the Examiner in the October 21, 2003 Office Action, Asami et al. discloses all the claimed features of the invention, with the exception of the specifically claimed material copper.

However, Asami et al. does not "disclose all the claimed features of the invention, with the exception of the specifically claimed material copper." As discussed above, the present invention is drawn to a reservoir for storing hydrogen, comprising a housing, a molded body having a thickness equal to or smaller than ten millimeters and comprising a compressed hydrogen storage material powder, a heat medium passage including a duct that has a plurality of holes that extend parallel with each other in a longitudinal direction of the duct, and a filter

which forms a hydrogen passage. *See* claim 5. Additionally, the present invention is drawn to a reservoir for storing hydrogen, comprising a housing a plurality of storage units stacked in the interior of the housing, wherein each storage unit includes: a pair of plate-like molded bodies each having a thickness equal to or smaller than ten millimeters and comprising a compressed hydrogen storage material powder, a heat exchanger located between the molded bodies (wherein the heat exchanger includes a flat duct having a plurality of holes that extend parallel with each other in a longitudinal direction of the duct), and a plurality of filters which form flat hydrogen passages. *See* claim 11.

Asami et al. is directed to a heat exchange apparatus for use with hydrogen storing material, which is characterized in that a regenerator chamber packed with a heat storing material is disposed in between a high temperature fluid pathway and a low temperature pathway of the heat exchanger. Col. 2, lines 9-14. However, there is no teaching or suggestion in Asami et al. of a molded body having a thickness equal to or smaller than ten millimeters.

Thus, Asami fails to render obvious claims 5 and 11. Accordingly, withdrawal of the Examiner's rejection is respectfully requested.

Rejection Under 35 U.S.C. §103(a) – Asami et al. in view of Onishi et al.

In the Advisory Action, the Examiner rejected claim 13 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,393,924 (Asami et al.) in view of JP 62-288495 (Onishi et al.). According to the Examiner in the October 21, 2003 Office Action, Asami et al. discloses all the claimed features of the invention with the exception of the body including a chamfer.

However, Asami et al. does not "disclose all the claimed features of the invention with the exception of the body including a chamfer." As discussed above, the present invention

is drawn to a reservoir for storing hydrogen, comprising a housing a plurality of storage units stacked in the interior of the housing, wherein each storage unit includes: a pair of plate-like molded bodies each having a thickness equal to or smaller than ten millimeters and comprising a compressed hydrogen storage material powder, a heat exchanger located between the molded bodies (wherein the heat exchanger includes a flat duct having a plurality of holes that extend parallel with each other in a longitudinal direction of the duct), and a plurality of filters which form flat hydrogen passages. *See* claim 13.

Asami et al. is directed to a heat exchange apparatus for use with hydrogen storing material, which is characterized in that a regenerator chamber packed with a heat storing material is disposed in between a high temperature fluid pathway and a low temperature pathway of the heat exchanger. Col. 2, lines 9-14. However, there is no teaching or suggestion in Asami et al. of a molded body having a thickness equal to or smaller than ten millimeters.

Onishi et al. does not make up for the deficiencies of Asami et al.. Onishi et al. is drawn to a heat exchanger. *See* Abstract. In the October 21, 2003 Office Action, the Examiner cited Onishi et al. for disclosing bodies including a chamfer for the purpose of having an efficient packing of the bodies within a housing which increases the filling rate of hydrogen. Onishi et al. does not teach or suggest a molded body having a thickness equal to or smaller than ten millimeters. Thus, its combination with Asami et al. would not render obvious claim 13.

Accordingly, withdrawal of the Examiner's rejection is respectfully requested.

Rejection Under 35 U.S.C. §103(a) – Asami et al. in view of Davis

In the Advisory Action, the Examiner rejected claim 14 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,393,924 (Asami et al.) in view of U.S. Patent No. 6,237,680 B1 (Davis). According to the Examiner in the October 21, 2003 Office Action, Asami

et al. discloses all the claimed features of the invention with the exception of a connecting section between upstream and downstream sections.

However, Asami et al. does not "disclose all the claimed features of the invention with the exception of a connecting section between upstream and downstream sections." As discussed above, the present invention is drawn to a reservoir for storing hydrogen, comprising a housing a plurality of storage units stacked in the interior of the housing, wherein each storage unit includes: a pair of plate-like molded bodies each having a thickness equal to or smaller than ten millimeters and comprising a compressed hydrogen storage material powder, a heat exchanger located between the molded bodies (wherein the heat exchanger includes a flat duct having a plurality of holes that extend parallel with each other in a longitudinal direction of the duct), and a plurality of filters which form flat hydrogen passages. *See* claim 14.

Asami et al. is directed to a heat exchange apparatus for use with hydrogen storing material, which is characterized in that a regenerator chamber packed with a heat storing material is disposed in between a high temperature fluid pathway and a low temperature pathway of the heat exchanger. Col. 2, lines 9-14. However, there is no teaching or suggestion in Asami et al. of a molded body having a thickness equal to or smaller than ten millimeters.

Davis does not make up for the deficiencies of Asami et al.. Davis is drawn to a radiator which utilizes laminar flow to more efficiently cool a liquid coursing through the radiator. Col. 1, lines 6-8. In the October 21, 2003 Office Action, the Examiner cited Davis for disclosing that it is known to have a connecting section between upstream and downstream sections for the purpose of increasing the fluid flow length which increases the time the fluid exchanges heat which increases the overall heat exchange efficiency. Davis does not teach or

suggest a molded body having a thickness equal to or smaller than ten millimeters. Thus, its combination with Asami et al. would not render obvious claim 14.

Accordingly, withdrawal of the Examiner's rejection is respectfully requested.

Rejection Under 35 U.S.C. §103(a) – Asami et al. in view of Davis, and further in view of Farfaletti-Casali et al.

In the Advisory Action, the Examiner rejected claim 15 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,393,924 (Asami et al.) in view of U.S. Patent No. 6,237,680 B1 (Davis) as applied to claim 14 and further in view of U.S. Patent No. 4,362,207 (Farfaletti-Casali et al.). According to the Examiner in the October 21, 2003 Office Action, Asami et al., as modified, discloses all the claimed features of the invention with the exception of the header including both upstream and downstream sections.

However, Asami et al., as modified does not "disclose all the claimed features of the invention with the exception of the header including both upstream and downstream sections." As discussed above, the present invention is drawn to a reservoir for storing hydrogen, comprising a housing a plurality of storage units stacked in the interior of the housing, wherein each storage unit includes: a pair of plate-like molded bodies each having a thickness equal to or smaller than ten millimeters and comprising a compressed hydrogen storage material powder, a heat exchanger located between the molded bodies (wherein the heat exchanger includes a flat duct having a plurality of holes that extend parallel with each other in a longitudinal direction of the duct), and a plurality of filters which form flat hydrogen passages.

See claim 15.

Asami et al. is directed to a heat exchange apparatus for use with hydrogen storing material, which is characterized in that a regenerator chamber packed with a heat storing

material is disposed in between a high temperature fluid pathway and a low temperature pathway of the heat exchanger. Col. 2, lines 9-14. However, as discussed above, there is no teaching or suggestion in Asami et al., even as modified by Davis, of a molded body having a thickness equal to or smaller than ten millimeters.

Farfaletti-Casali et al. does not make up for the deficiencies of Asami et al., as modified. Farfaletti-Casali et al. is drawn to an integrated system adapted to use and exploit substances in solid and paste form which are capable of exo-endothermic thermochemical reactions as a means for term storage of thermal energy. Col. 1, lines 6-11. In the October 21, 2003 Office Action, the Examiner cited Farfaletti-Casali et al. for disclosing that it is known to have a header including upstream and downstream sections for the purpose of reducing the number of parts and reducing overall size, weight and cost. Farfaletti-Casali et al. does not teach a molded body having a thickness equal to or smaller than ten millimeters. Thus, its combination with Asami et al., as modified, would not render obvious claim 15.

Accordingly, withdrawal of the Examiner's rejection is respectfully requested.

CONCLUSION

For all the reasons advanced above, Applicants respectfully submit that the application is in condition for allowance and that action is earnestly solicited.

The Commissioner is hereby authorized to charge any additional fees which may be required for this amendment, or credit any overpayment to Deposit Account No. 13-4500, Order No. 5000-4853.

In the event that an extension of time is required, or may be required in addition to that requested in a petition for an extension of time, the Commissioner is requested to grant a

Amendment dated September 13, 2004
Reply to Advisory Action of July 13, 2004

petition for that extension of time which is required to make this response timely and is hereby authorized to charge any fee for such an extension of time or credit any overpayment for an extension of time to Deposit Account No. 13-4500, Order No. 5000-4853.

Respectfully submitted,
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